ACHIEVING INTEROPERABILITY THROUGH INTERNATIONAL COOPERATIVE PROGRAMS

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In the wake of flaring hostilities in the decades-old conflict between Sri Lankan forces and Tamil Tigers, U.N. observers found themselves swept unexpectedly into the fray. The multinational force is composed of observers from the United Kingdom (U.K.) and several African countries. Their only offensive weapon capable of halting the belligerents' armor formations was the U.K.'s limited number of WAH-64D Apache Longbow helicopters. The U.K. version of this nearly 20-year-old attack helicopter was limited in employment because of the island country's monsoon season. Fortunately, they did have a large stock of U.S.- and U.K.-developed Common Missiles.

In less than 72 hours, a brigade of U.S. forces equipped with Future Combat Systems (FCS) and RAH-66 Comanche helicopters was deployed by C-130s to the small airstrip still controlled by the U.N. forces. Employing the U.K.'s stock of Common Missiles on the FCS and Comanche, the U.S. brigade was able to separate the warring factions and re-establish peace. The U.S. brigade will remain in Sri Lanka for another 30 days to assist in reparations of the damage caused by the monsoons and warring factions. The U.N. forces will have their Common Missiles and other supplies replenished by the Carrier Group's Marine Expeditionary Force, which will be leaving the Indian Ocean within a week.

Introduction

While the above is a fictional account of a futuristic event, it highlights the great potential gained by a fully interoperable weapon system—the Common Missile—developed in an international cooperative program. Interoperability such as that described previously, decreased national armament budgets, access to offshore technological expertise, and a shrinking Defense industrial base all contribute to creating an environment that requires international cooperative programs. However, regardless of how well cooperative programs appear at a philosophical level, the real challenge is whether they can be successful.

Structure For Success

Within the United States, interoperability is a key performance parameter. The best way to ensure interoperability is through a joint or an international program with a key ally. However, the single most critical aspect of a joint or an international program is a common need. Partners must possess an operational requirement that is sufficiently similar to allow for a common solution. While the overarching requirement is essential, the "devil lies in the details." The ability to clearly harmonize the operational requirements is paramount to a successful and affordable program. This is accomplished by a set of clearly delineated processes for development with other Services (e.g., Joint Requirements Oversight Council or Joint Operational Requirements Documents). However, with an international cooperative program, the processes are tailored to suit the partner nations, their industries, and the system being developed.

An international cooperative program must first support the national policy of the partners. Without a

Common Missile Factoids: The Real Program

- Cooperative Program: United States-United Kingdom
- Joint Program: Army, Navy, Marines
- Replaces Aging Hellfire and Tube-launched, Optically-tracked, Wire-guided Fleet
- Objective Missile for Comanche—Candidate for FCS
- Time-Phased Operational Requirements Document and Evolutionary Acquisition Strategy
- PDRR FY01-03, Development FY04-07, Production FY08-20
- Competition Throughout Life Cycle
- Concurrent Production and Planned Technology Insertion
- Army Requirement: ~73,000 Missiles

Lessons Learned From Other Programs

• There must be strong and dedicated support both financially and politically throughout the lifetime of the program by all parties' governments.

• Common and agreed-to program goals must be present from initiation to completion.

• Senior-empowered managers from all partners must be involved and committed to success.

• Limiting the number of partners diminishes decisionmaking and coordination difficulties.

• Work share and cost share cannot always be met—flexibility within acceptable standards must be understood—industry is best suited to realistically address work share.

• Technology transfer and export licensing, as well as language and cultural differences, are issues that must be anticipated and addressed. They can be overcome and should not be considered impediments to program success.

• Trust, honesty, and speaking with "one voice" results in no surprises and often leads to achieving milestones.

clear-cut, national strategic interest in a teaming relationship and a long-term commitment, any initiative is doomed to failure. Given this prerequisite, successful programs result from establishing the partnership from the beginning. This allows for a truly collaborative program rather than just a cooperative program. Collaboration implies that the partners jointly contribute to the solution of a common requirement, rather than merely provide financial resources. Consequently, wisely selecting a partner(s) becomes an overriding concern. But a more practical consideration also comes into play by limiting the number of partners in the program. As a senior U.K. Defence official stated recently during a conference, "International programs are like car pools … two can generally agree on arrival and departure times. Introduction of additional partners significantly complicates the entire decisionmaking apparatus."

Economic Considerations

Declining budgets, increasing costs attributable to system sophistication and complexity, and less than economic production rates underwrite international cooperation as a means for providing affordable systems to our soldiers. This affordability dynamic includes not only the associated economies of scale derived from pooling production requirements, but the synergy of leveraged technology as well.

In 1970, 20 percent of research and development (R&D) dollars invested within the United States came from DOD. In 1998, DOD's share of investment dollars had dropped to only 5 percent. The dominant position has been assumed by the commercial sector investing in R&D activities focused on profitability, not national security. While there are many benefits derived from commercial R&D activities, Defense-unique requirements remain. Sharing the financial bill and the technology benefits allows the partners to leverage technical expertise and funding availability.

Recognizing that partners will each have different approval, political, and fiscal processes is an important facet. The approval process becomes vital to program initiation. Extended negotiations can actually impact in-service dates as well as contract costs and schedules. Memorandum of Understanding agreements must be timed to ensure support by the respective financial programming, budgeting, and operational requirement processes. A simple consideration such as synchronizing funding commitments to coincide with different fiscal years is a small detail with tremendous implications. Fundamentally, the partners must understand each other's bureaucracy and adjust. Further, clear understanding of each other's national expectations must be openly established. Expectations concerning duration, commitments, schedule, financial contributions, and industrial benefits must be understood and agreed to by all parties. Essentially, the partners must listen to each other on all aspects of the program—not just listen to program supporters who tell you what you want to hear.

Successful Relationships

Many advocate that the most successful cooperative programs are conceived through industrial teaming, not by government-to-government cooperation. **I disagree**. The best cooperative programs are grounded in agreements between governments. Export controls, long-term political and fiscal commitment, and common-user requirements are best accommodated through intergovernment agreements. However, execution of a multinational action can only be accomplished by expanding the government team to include industry partners and providing industry with the freedom, flexibility, and authority to make appropriate key decisions.

Entering into a cooperative program, by default, brings an expectation of mutual benefits both on the battlefield and in the factory. While many would advocate strict work-share

"To mitigate potential protectionism and negative effects on U.S.-European defense trade, both U.S. defense industry and government have taken steps to improve transatlantic cooperation."

—GAO Report 98-6, Defense Trade

ratios, I support the approach that allows industry to negotiate the best work-share relationship. The overriding factor must be to provide the best system to our soldiers. Strict work-share ratios can create disincentives to accomplishing this most important mission.

Realistically, the prime contractor understands that a successful international program will result only through the involvement of the partner nations' industries. Production sales will certainly be influenced by the domestic content. Consequently, the contractor is in the best position to identify where the best-value approach to work allocation between countries lies, with a clear recognition that content from the partner's domestic suppliers will influence the production orders.

Security And Proprietary Considerations

One of the most difficult aspects of a cooperative program is addressing export controls. Though the United States has made significant strides in streamlining and modernizing export control procedures, the desire and **need** to protect sensitive national information remains. Ensuring that critical technologies are not compromised is essential to each partner's security and national competitiveness. Within the United States, we have streamlined government-to-government procedures, resulting in improved efficiency and reduced processing times. Additionally, we have placed the disclosure and release authority at the appropriate level to assess both technological risk and competitive sensitivity. This ensures that knowledgeable individuals make informed decisions concerning the release of both classified and unclassified technical information.

Another new initiative is the use of Global Program Licenses to provide an umbrella authorization for the exchange of technical and production information throughout the life of a cooperative program.

Structure For Success

- Common national goals
- Limit number of partners
- Wisely select partners
- Industry is responsible for work share and work-share allocation
- Interoperability and requirements harmonization
- Understand one another's systems

Trust

The bedrock concept for ensuring success revolves around trust. Experience shows that if the fiscal and political considerations can be accommodated, trust between partners determines the success of the program. Developing a common understanding to ensure problems and issues are identified and resolved early allows the partners to focus on solutions rather than the problems. This trust is essentially built over time and in many respects is more personal than programmatic. Continuity of key personnel and a commitment to cooperation and collaboration by those key individuals produces long-term success.

Conclusion

International cooperative programs are both difficult and rewarding. Critics of international cooperative programs argue that these types of projects are more expensive and are influenced by political concerns. Critics also argue that these programs result in duplication of production activities and the associated loss of economies of scale. This can be true, but **only** if we allow these detractors to become the primary focus and fail to profit from past experience. However, the incontrovertible fact remains that the best way to ensure interoperability with our coalition partners is through an international cooperative program.

Currently, the United States and the United Kingdom have begun to establish a cooperative program on our next-generation tactical missile. The Common Missile Program has been structured using the lessons learned from past cooperative endeavors. We are committed to the success of that program and, through that commitment, expect to provide U.S. soldiers and Marines and U.K. soldiers with a superb system that exploits the lessons learned from previous cooperative programs.

In spite of the complexity and challenges, the Army will continue to pursue opportunities for international cooperative development and production. There are significant benefits to the United States and our allies in continuing these efforts, and we must ensure that our soldiers are the recipients of the very best interoperable systems.

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